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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,421	01/30/2006	Akio Iwabuchi	60233-025	3632
27305 7590 11/06/2008 HOWARD & HOWARD ATTORNEYS, P.C. THE PINEHURST OFFICE CENTER, SUITE #101 39400 WOODWARD AVENUE BLOOMFIELD HILLS, MI 48304-5151				
EXAMINER				
HO, ANTHONY				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/566,421

Applicant(s)

IWABUCHI ET AL.

Examiner

ANTHONY HO

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 1-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-12 and 18 is/are rejected.
- 7) ☒ Claim(s) 13-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/ISD)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date 7/24/2008

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group 2 (claims 8-18) in the reply filed on July 21, 2008 is acknowledged.

Accordingly, claims 1-7 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on July 21, 2008.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on July 24, 2006 was filed after the mailing date of the instant application on January 30, 2006. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 recites "further comprising a high-voltage resistive element," but it is unclear from the specification what is being meant as a "high-voltage" resistive element. Thus, one of ordinary skill in the art would not be able to define the metes and bounds of the claimed invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8-12 and 18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ludikhuize (US Patent 5,796,146).

In re claim 8, Ludikhuize discloses a semiconductor device comprising: a first semiconductor region (5) of a first conductive type; a second semiconductor region (3) of a second conductive type formed on said first semiconductor region (5); a third semiconductor region (6) of the first conductive type formed in a surface region of said second semiconductor region (3) along an outer periphery of said second semiconductor region (3), and having a higher impurity concentration than that of said first semiconductor region (5); a fourth semiconductor region (18) of the first conductive type formed adjacent to a bottom surface of said third semiconductor region (6), and having a higher impurity concentration than that of said first semiconductor region (5); a fifth semiconductor region (15) of the first conductive type formed in the surface region of said second semiconductor region (3); a sixth semiconductor region (7) of the second conductive type formed in a surface region of said fifth semiconductor region (15); a first electrode (12) electrically connected to said second semiconductor region (3); a second electrode (rightmost 11) electrically connected to said sixth semiconductor region (7); and a control electrode (14) laid out on said fifth semiconductor region (15) through an insulating film (16), wherein said fourth semiconductor region (18) is formed in said first semiconductor region (5) and said second semiconductor region (3), and has a

protrusive piece (rightmost 18) so formed as to extend closer to said first electrode (12) side than said third semiconductor region (6), and a portion (leftmost 18) so formed as not to extend closer to said first electrode (12) than said protrusive piece (rightmost 18) (i.e. Figure 2; column 3 – column 4).

In re claim 9, the recitation “wherein the protrusive piece of said fourth semiconductor region is formed in such a way that an electric potential difference between said control electrode and said fifth semiconductor region lying under said control electrode becomes small with negative static electricity being applied to said first electrode” in the claim specifies an intended use or field of use and is treated as nonlimiting since it has been held that in device claims, intended use must result in a structural difference between the claim invention and the prior art in order to patentably distinguish the claim invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. *In re Casey*, 152 USPQ 235 (CCPA 1967); *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

In re claim 10, Ludikhuize discloses a top surface of the protrusive piece (rightmost 18) of said fourth semiconductor region (18) faces a bottom surface of said fifth semiconductor region (15) through said second semiconductor region (3) (i.e. Figure 2).

In re claim 11, Ludikhuize discloses a seventh semiconductor region (9) of the second conductive type having a higher impurity concentration than that of said second semiconductor region (3), in the surface region of said second semiconductor region (3), wherein said seventh semiconductor region (9) is electrically connected to said first electrode (12) (i.e. Figure 2).

In re claim 12, Ludikhuize discloses an eighth semiconductor region (6a) of the first conductive type formed in the surface region of said fifth semiconductor region (15) and having a higher impurity concentration (in this case, it is within the scope of one of ordinary skill in the art to dope region 6a higher than region 15) than that of the fifth semiconductor region (15), wherein said eighth semiconductor region (6a) is electrically connected to a back gate electrode (leftmost 11) (i.e. Figure 2).

In re claim 18, as best understood, it is within the scope of one of ordinary skill in the art to attach a "high-voltage" resistive element to the semiconductor device in order to obtain a semiconductor with specific characteristics.

Allowable Subject Matter

Claims 13-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Ludikhuize (US Patent 5,883,413)
- b. Williams et al (US Patent 5,374,843)
- c. Shirai (US Patent 5,306,938)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY HO whose telephone number is (571)270-1432. The examiner can normally be reached on M-Th: 10:30AM-9:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. H./
Examiner, Art Unit 2815

/Jerome Jackson Jr./
Primary Examiner, Art Unit 2815